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CENTRAL FAX CENTERAppl. No. 10/729,802  
Amdt. dated November 20, 2006  
Reply to Office Action of June 7, 2006,

NOV 20 2006

PATENT**REMARKS/ARGUMENTS**

In this amendment Claims 13-20 are cancelled without prejudice to future prosecution.

Claims 1-5 have been amended and new claim 21 added to specify that the claimed polynucleotides encode an amino acid sequence at least 98% identical to the amino acid sequence encoded in SEQ ID NO:1. Support for the amendments is replete in the specification including paragraph [0037] (describing 98% sequence identity) and Table 1 on pages 7-8 (identifying regions of SEQ ID NO:1 corresponding to domains, modules and polypeptides of the disorazole PKS gene).

**Objections**

The title has been amended as suggested by the Examiner.

Paragraph [0037] of the specification has been amended as suggested by the Examiner.

Paragraph [0091] of the specification has been amended to add a sequence identifier.

The Examiner also indicated that a sequence identifier was missing on page 34 of the specification, but did not identify the relevant sequence. Applicants can find no sequence with a missing identifier. The Examiner is asked to reconsider this objection and contact the undersigned if she believes this objection is correct.

Claim 12 has been amended as suggested by the Examiner.

**Rejections under 35 U.S.C. § 112, first paragraph (Written Description & Enablement)**

Claims 1-12 and 20 were rejected as not described in or enabled by the specification. Without agreeing with the position articulated by the Office, Applicants believe the amendments to the claims overcome the rejections.

As amended, the claims are directed to polynucleotides encoding a polypeptide with an amino acid sequence at least 98% identical (claims 1, 3 and 5) or 100% identical (claims 2, 4 and 21) to the sequence encoded in SEQ ID NO:1. SEQ. ID NO:1 is provided at pages 35-58 of the specification. Table 1 (pages 7-8 of the specification) clearly delineate the domain, module and polypeptide encoding regions of SEQ ID NO:1.

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The requirement of at least 98% sequence identity defines the claimed polynucleotides according to physical and chemical properties. Applicants believe it clear that the claimed polynucleotides are described (i.e., that the inventors had possession of the claimed invention). The sequence encoding the disorazole PKS proteins was discovered and is disclosed by the inventors. The claims accounts for minor variations in the encoded polypeptides of the sort clearly described in the specification. The specification is replete with description of mutations of the native disorazole sequences including, for example, conservative amino acid substitutions and mutations to inactivate a PKS domain (and thus change the product produced by the action of a PKS). See, e.g., paragraphs [0042], [0047], [0053] and [0054].

Methods for making mutations in genes of known sequence are well known and require only routine molecular biological techniques. In particular, techniques for manipulation of PKS gene sequences are well known by those of skill in the PKS arts. Exemplary methods are described in the specification (see, e.g., paragraph [0054]).

Applicants believe the claims, as amended in this response, are in accord with the requirements of Section 112, first paragraph.

**Rejection under 35 U.S.C. §112, second paragraph**

The rejection of Claim 2 is mooted by the amendment of the claim.

**Rejection under 35 U.S.C. §102(e)**

Claims 1-12 and 20 were rejected as anticipated by Julien et al. (USPN 6,410,301), November 1998). The Office Action states that Julien et al. discloses a nucleic acid encoding a PKS of *Sorangium cellulosum*. However, the '301 patent discloses the epothilone PKS of *S. cellulosum*, while the present invention is directed to the disorazole PKS. The epothilone PKS and disorazole PKS are encoded in different gene clusters and have different sequences and properties. Accordingly, the '301 patent does not anticipate the present invention.

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CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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